AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (canceled)

Claim 2 (canceled)

Claim 3 (previously presented): A diode-structure diamond ultraviolet light-emitting device, said device comprising a p-type semiconductor layer formed of diamond crystal, and an n-type semiconductor layer formed of diamond crystal, said device emitting light when excited by current injection, wherein the free exciton recombination radiation is dominant, and wherein said the free exciton recombination radiation being dominant refers to a state where the intensity of the free exciton recombination radiation is at least two times or more greater than the intensity of radiation caused by impurities or defects, wherein said diode-structure diamond ultraviolet light-emitting device comprises a pn junction.

Claim 4 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 3, wherein both said diamond crystals are high-quality crystals including only a minute amount of impurity other than the dopant.

Claim 5 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 3, wherein said n-type diamond crystal is a diamond crystal doped with phosphorous.

Claim 6 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 3, wherein said n-type diamond crystal is a diamond crystal doped with sulfur.

Claim 7 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 3, wherein said n-type diamond crystal is a diamond crystal grown by the chemical vapor deposition method.

Claim 8 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 3, wherein said p-type semiconductor diamond crystal is a diamond crystal doped with boron.

Claim 9 (original): A diode-structure diamond ultraviolet light-emitting device according to claim 8, wherein said boron-doped diamond crystal has a boron concentration of 100 ppm or smaller.

Claim 10 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 3, wherein said p-type semiconductor diamond crystal is a crystal synthesized by the high temperature and high pressure synthesis method.

Claim 11 (original): A diode-structure diamond ultraviolet light-emitting device according to claim 10, wherein said high-temperature and high-pressure synthetic diamond crystal is synthesized by adding a nitrogen remover to the flux.

Claim 12 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 3, wherein said p-type semiconductor diamond crystal is a diamond crystal grown by the chemical vapor deposition method.

Claim 13 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 7, wherein said diamond crystal grown by the chemical vapor deposition method is a homoepitaxial film grown homoepitaxially on a diamond crystal substrate.

Claim 14 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 7, wherein said diamond crystal grown by chemical vapor deposition method is a diamond crystal film grown by the microwave plasma-assisted chemical vapor deposition method.

Claim 15 (previously presented): A diode-structure diamond ultraviolet light-emitting device, said device comprising a p-type semiconductor layer formed of diamond crystal, and an n-type semiconductor layer formed of diamond crystal, said device emitting light when excited by current injection, wherein the free exciton recombination radiation is dominant, wherein said the free exciton recombination radiation being dominant refers to a state where the intensity of the free exciton recombination radiation is at least two times or more greater than the intensity of radiation caused by impurities or defects, wherein said p-type semiconductor layer is synthesized by means of a high temperature and high pressure synthesis method, and wherein said n-type diamond crystal is grown on said p-type semiconductor layer by means of a chemical vapor deposition method.

Claim 16 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 3, wherein a first diamond crystal grown by the chemical vapor deposition method is formed on a diamond substrate, and a second diamond crystal grown by the chemical vapor deposition method is further formed thereon.

Claim 17 (original): A diode-structure diamond ultraviolet light-emitting device according to

claim 16, wherein said first diamond crystal grown by the chemical vapor deposition method is either a p-type semiconductor diamond crystal or an n-type semiconductor diamond crystal, and said second diamond crystal grown by the chemical vapor deposition method is either an n-type semiconductor diamond crystal or a p-type semiconductor diamond crystal that differs from the first diamond crystal grown by the chemical vapor deposition method.

Claim 18 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 16, wherein said second diamond layer grown by the chemical vapor deposition method is grown selectively on said first diamond layer grown by the chemical vapor deposition method.

Claim 19 (previously presented): A diode-structure diamond ultraviolet light-emitting device according to claim 16, wherein an electrode is formed on the exposed surface of said first diamond layer grown by the chemical vapor deposition method.

Claim 20 (canceled)

Claim 21 (canceled)

Claim 22 (canceled)